## REMARKS

Applicants greatly appreciate the detailed examination evidenced by the Final Official Action mailed November 6, 2006 (hereinafter the Final Official Action). In the interest of brevity, Applicants' comments herein focus entirely on the "Response to Arguments" appearing in the Final Official Action including the remarks on Applicants' recitation of "growing" and the implications of CVD deposition, discussed in the cited references. *See Final Official Action, page 6.* However, to ensure that the present submission is fully responsive to the Final Official Action, Applicants hereby incorporate all of Applicants' previous responses herein by reference.

As understood by Applicants, the Final Official Action was issued on the basis of an alleged absence of a definition of the term "growing" recited in independent Claims 9 and 16. *Final Official Action, page 6.* In particular, the Final Official Action appears to have relied on external evidence to define the recitation of "growing" in Applicants' claims. Applicants respectfully point out that Applicants' claims actually recite **selectively growing**:

> forming a pattern to define a gap on a substrate;
> forming a bottom oxide layer on a surface of the substrate and substantially filling the gap; etching back the bottom oxide layer inside an opening in the gap to expose side walls of the gap so that a residual bottom oxide layer remains only at a bottom of the gap; and
> **selectively growing** a top oxide layer on the residual bottom oxide layer. *Patent Application Serial No. 10/732,931, Claim 9.*

and

> forming a bottom oxide layer only at a bottom of a gap in the substrate; and
> **selectively growing** a top oxide layer on the bottom oxide layer. *Patent Application Serial No. 10/732,931, Claim 16.*

Furthermore, contrary to the assertions in the Final Official Action, Applicants' specification does define the recitation of "selectively growing." For example, the specification reads:

> Referring to Fig. 7, the oxide layer may be deposited on the liner 56. However, the rate of deposition of the oxide layer formed on the bottom oxide layer can be faster than the deposition rate of

> the oxide layer formed on the liner 56 (on the side wall of the trenches 54). Accordingly, the upper oxide layer is **grown** according to a convex surface profile toward the opening of the trench 54 to a level below the opening. *Patent Application Serial No. 10/732,931, page 5, lines 19-24* (emphasis added).

Further the specification reads:

> In some embodiments according to the invention, gaps (such as trenches or spaces between gate electrodes) are filled by depositing an oxide in the gap having a relatively high deposition rate material (such as an oxide layer) on the bottom of the trench and absent from the side wall of the trench. The side wall has a relatively low deposition rate material (such as a nitride layer or a silicon layer) formed thereon. **The relatively high deposition rate of the material on the bottom of the gap can cause an oxide to grow faster on the bottom of the gap than on the side wall, which can cause faster growth in a central region of the gap (toward the opening of the gap) than in a region nearer the side wall.** Accordingly, the formation of seams or voids in an oxide deposited in high aspect ratio gaps can be reduced. *Patent Application Serial No. 10/732,931, page 7, lines 13-22 (emphasis added).*

As shown by the examples cited above, Applicants' disclosure does in-fact define "selectively growing" so that there is no need to refer to external evidence for a definition of "selectively growing."

In view of the above definition of "selectively rowing," Applicants submit that the HPD-CVD discussed in the cited references does not disclose "selectively growing" as **the HPD-CVD in the prior art is not selective**. In other words, the HPD-CVD process deposits material over the entire surface, and therefore is not **selective**, as claimed. For example, in the description of Figure 7 of the present Application:

> In some embodiments according to the invention, a material on the bottom of the trench promotes deposition at a greater rate than a different material on a side wall of the trench. The faster deposition of the material on the bottom of the trench allows the region where the voids or seams may otherwise be formed (*i.e.*, in the central region above bottom of the trench) to be filled with an oxide before the deposition from the material on the side walls reaches the central region.
>
> Referring to Fig. 7, the oxide layer may be deposited on the

> liner 56. However, the rate of deposition of the oxide layer formed on the bottom oxide layer can be faster than the deposition rate of the oxide layer formed on the liner 56 (on the side wall of the trenches 54). Accordingly, the upper oxide layer is grown according to a convex surface profile toward the opening of the trench 54 to a level below the opening. *Application, page 5, lines 19-29.*

In view of the above exemplary description in Applicants' disclosure, the claimed deposition is selective to provide the type op profile described above, which is not disclosed or suggested by the HPCVD technique in the cited prior art.

Accordingly, Applicants respectfully request reconsideration of the rejection and the withdrawal thereof, followed by the allowance of the present application. If any informal matters arise, the Examiner is encouraged to contact the undersigned by telephone at (919) 854-1400.

Respectfully submitted,

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